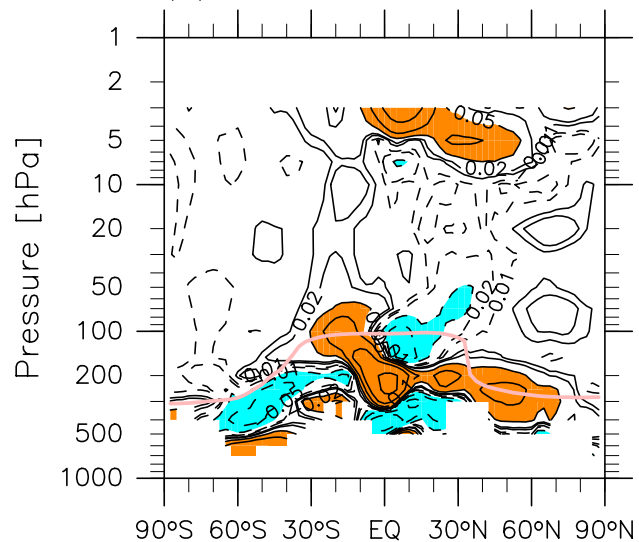
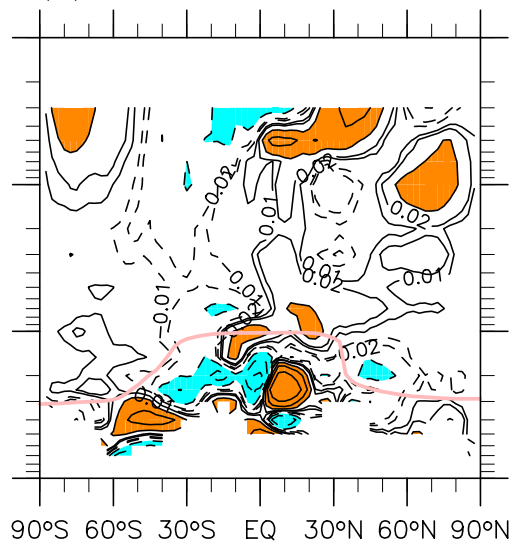


v_{res} [m/s]

(a) MERRA-2 – REM

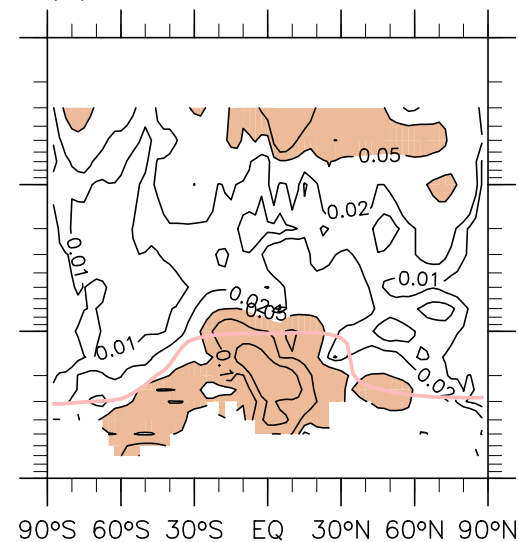


(b) JRA-55 – REM

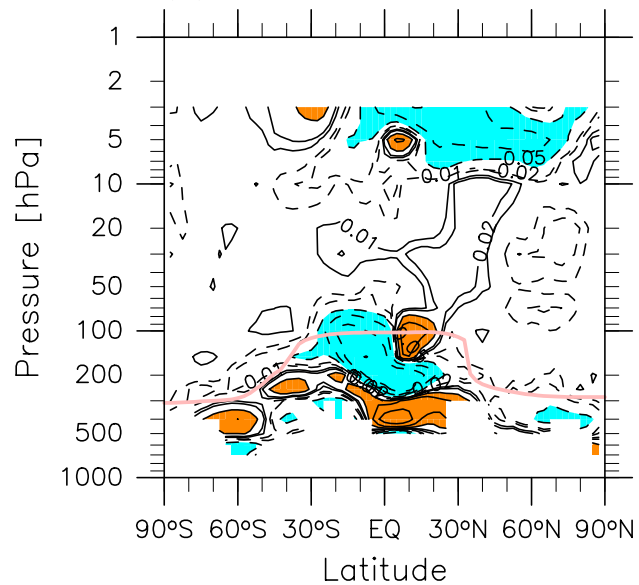


DJF (D80–F10)

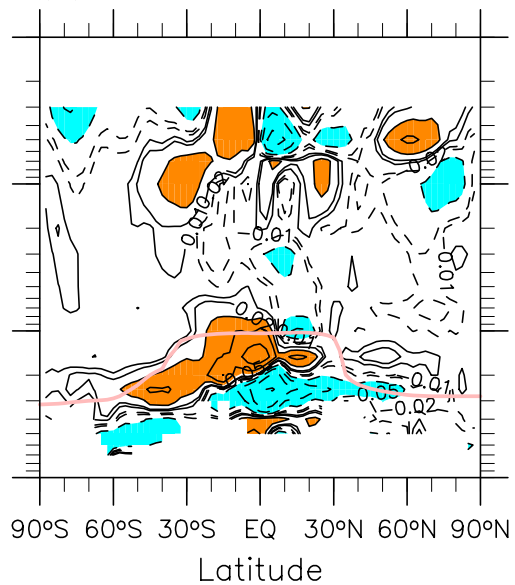
(e) SD



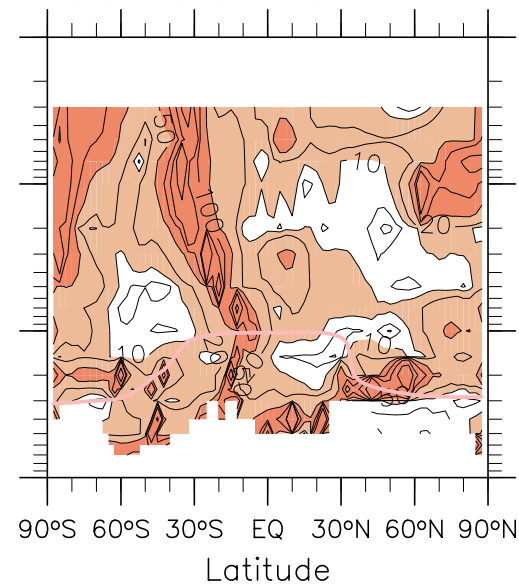
(c) ERA-Int – REM



(d) CFSR – REM

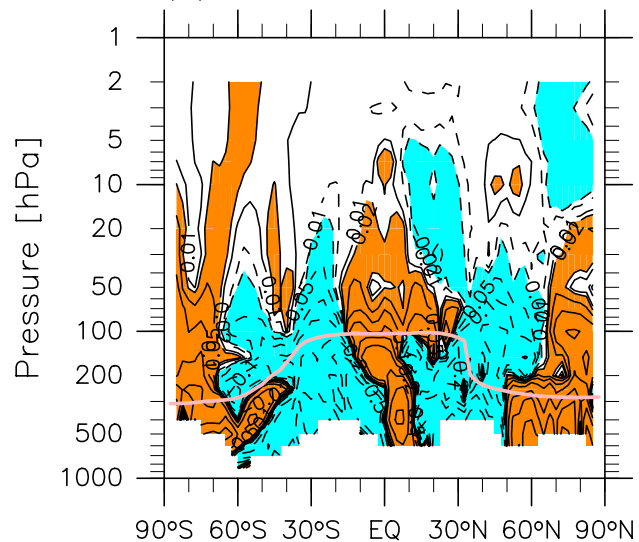


(f) $(SD / |REM|) \times 100\%$

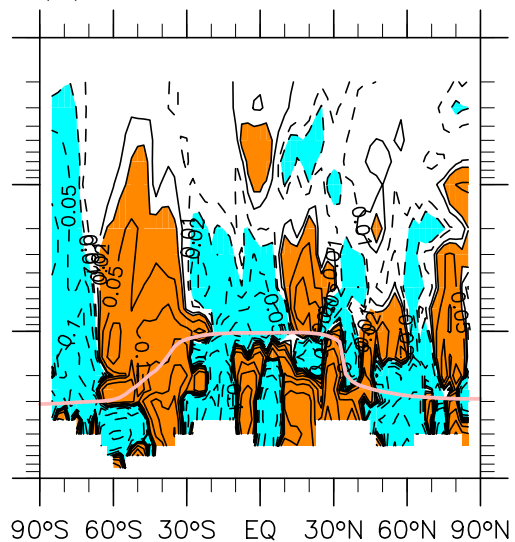


ω_{res} [mPa/s]

(a) MERRA-2 - REM

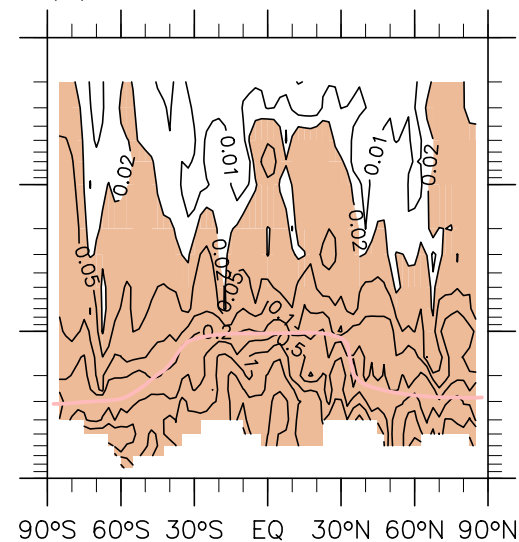


(b) JRA-55 - REM

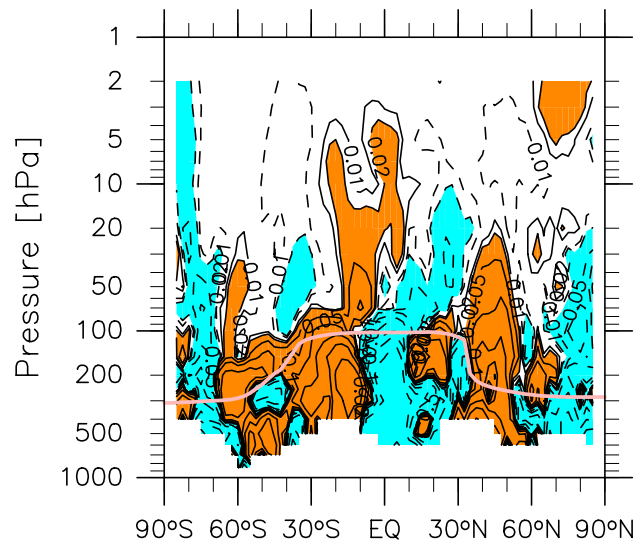


DJF (D80-F10)

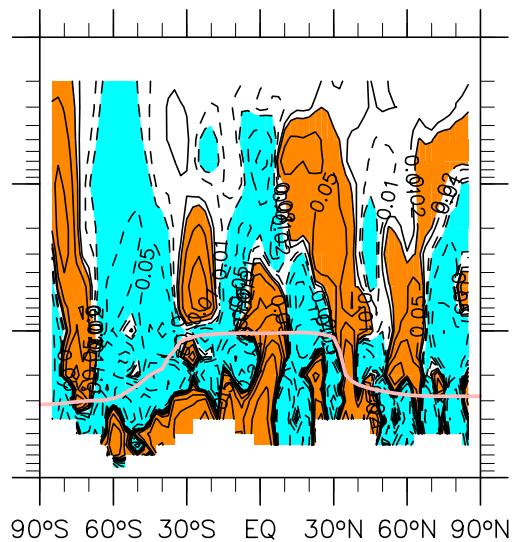
(e) SD



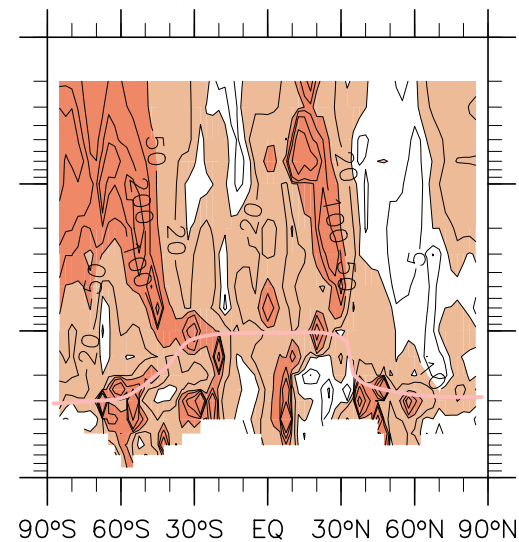
(c) ERA-Int - REM



(d) CFSR - REM



(f) $(\text{SD} / |\text{REM}|) \times 100\%$



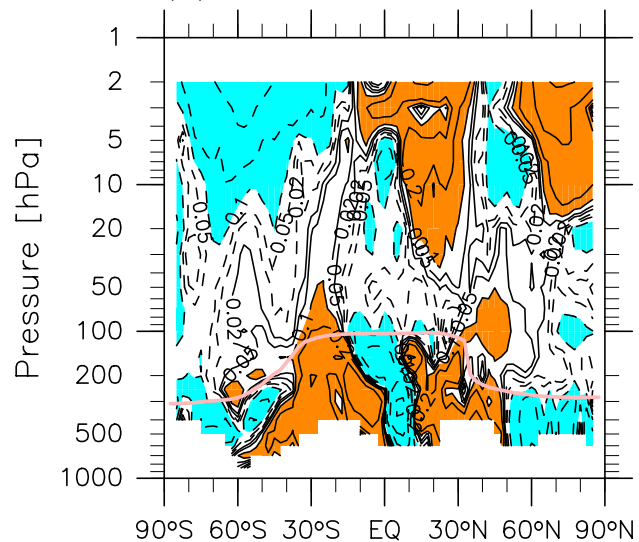
Latitude

Latitude

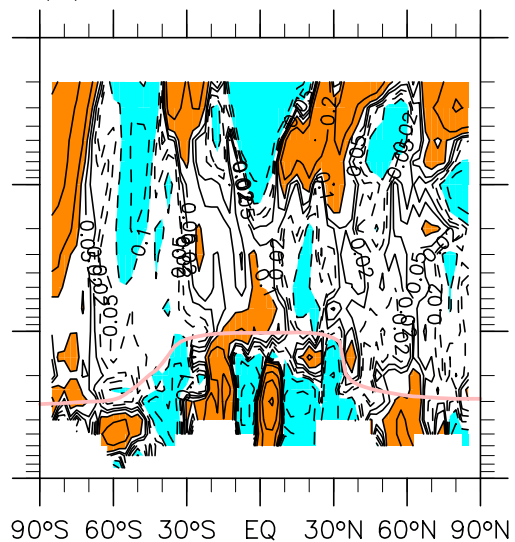
Latitude

w_{res} [mm/s]

(a) MERRA-2 – REM

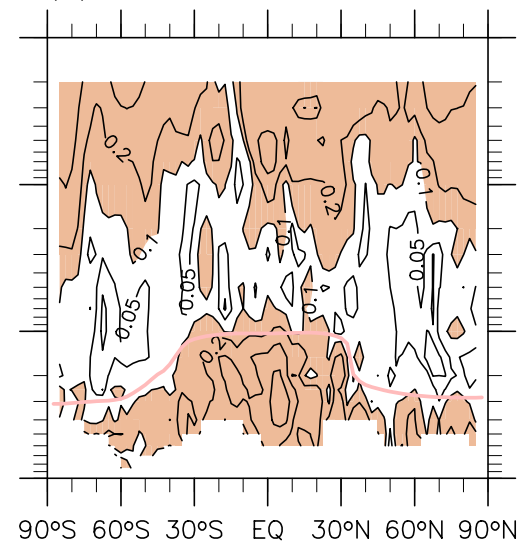


(b) JRA-55 – REM

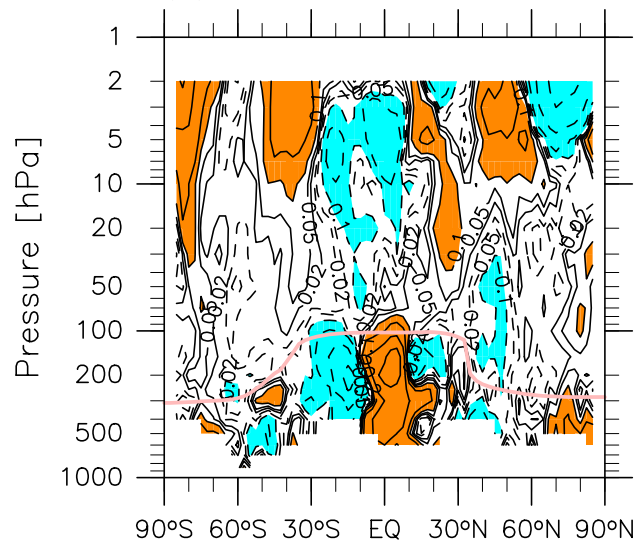


DJF (D80–F10)

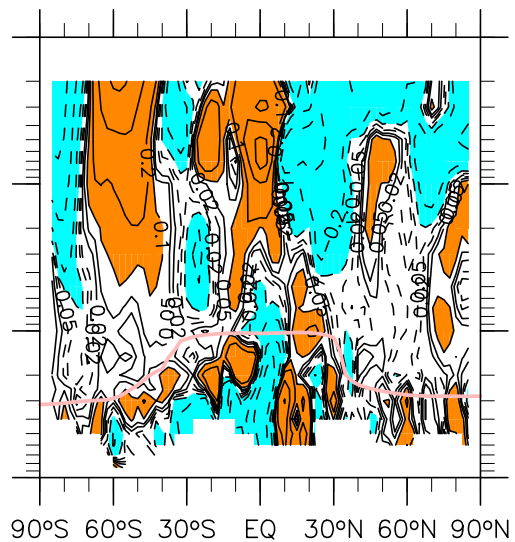
(e) SD



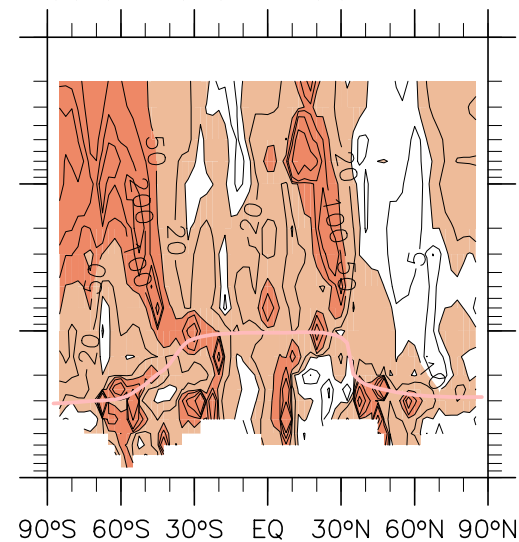
(c) ERA-Int – REM



(d) CFSR – REM



(f) $(SD / |REM|) \times 100\%$



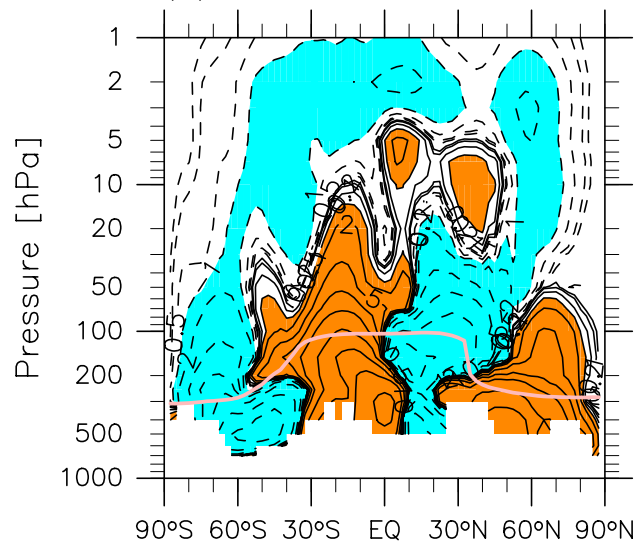
Latitude

Latitude

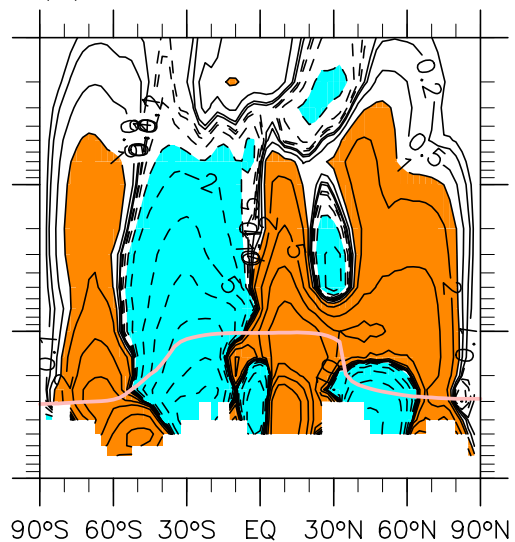
Latitude

Ψ_{vres} [kg/m/s]

(a) MERRA-2 - REM

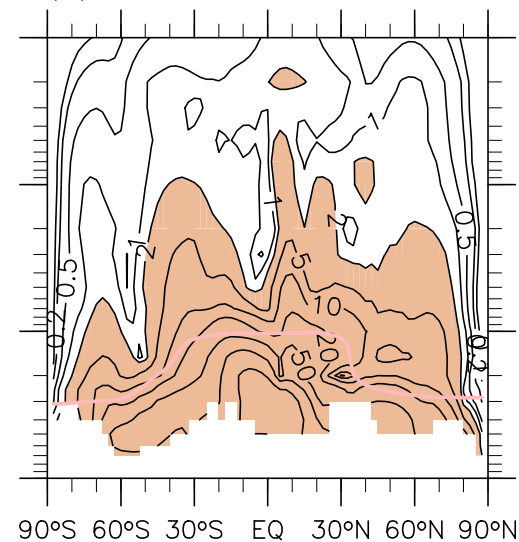


(b) JRA-55 - REM

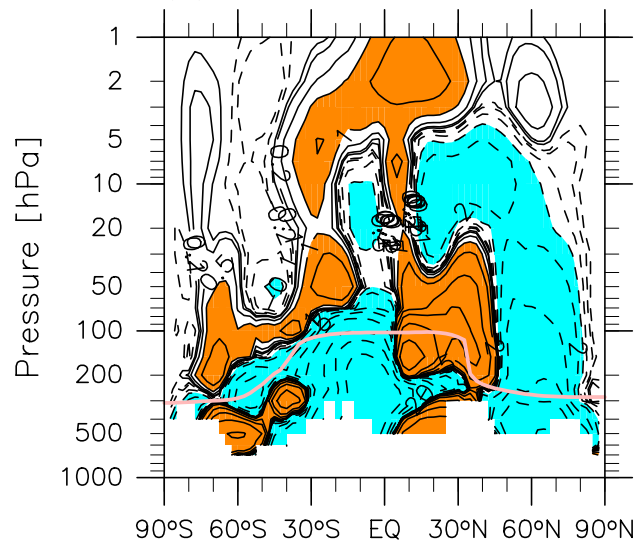


DJF (D80-F10)

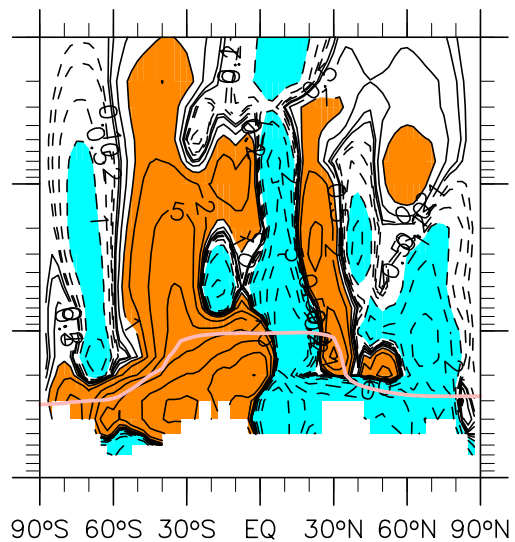
(e) SD



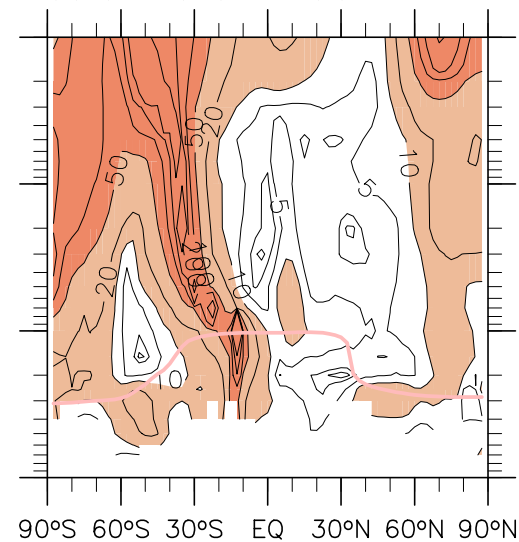
(c) ERA-Int - REM



(d) CFSR - REM



(f) $(\text{SD} / |\text{REM}|) \times 100\%$



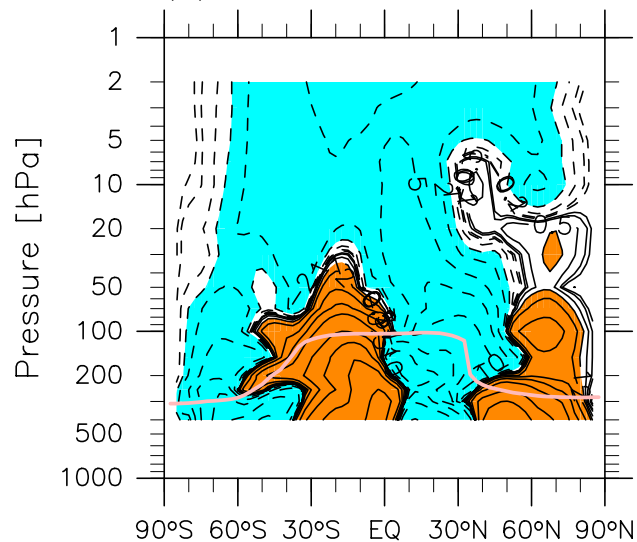
Latitude

Latitude

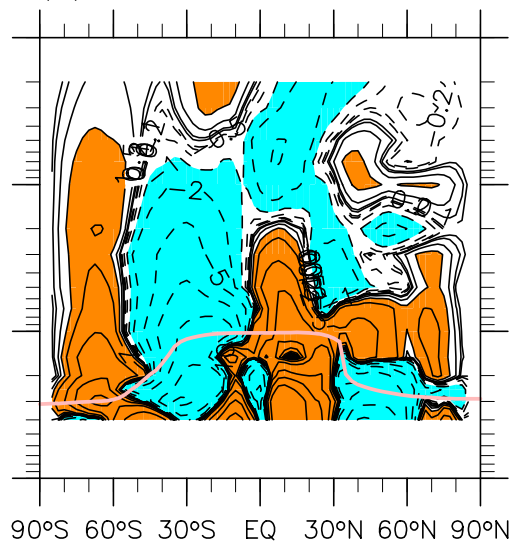
Latitude

ψ_{wres} [kg/m/s]

(a) MERRA-2 - REM

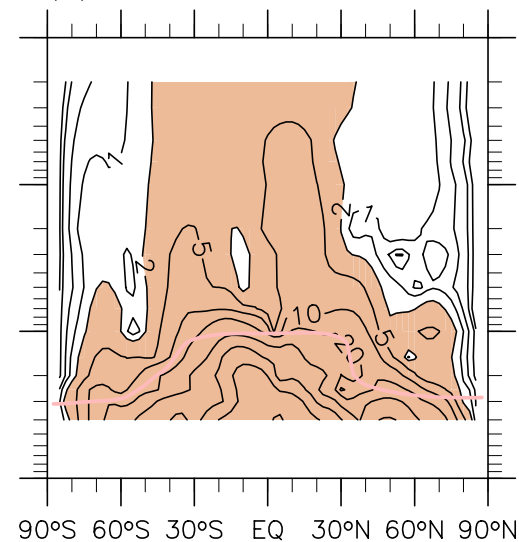


(b) JRA-55 - REM

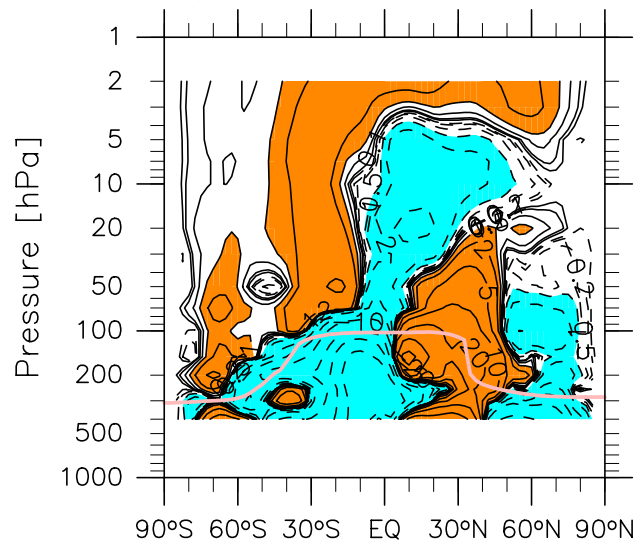


DJF (D80-F10)

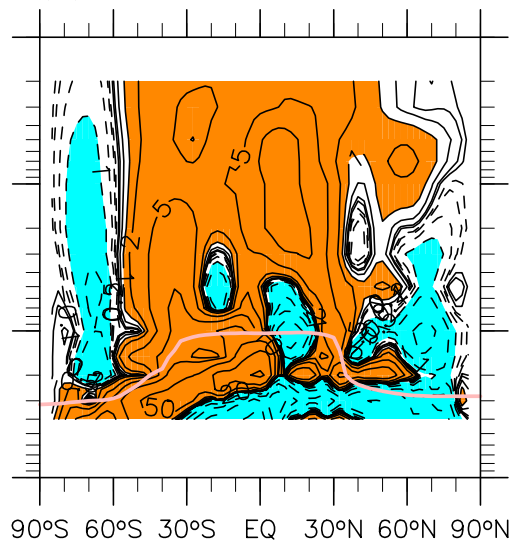
(e) SD



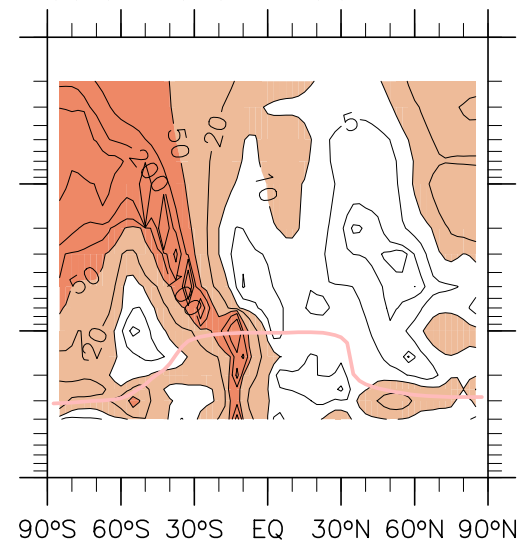
(c) ERA-Int - REM



(d) CFSR - REM



(f) (SD / | REM |) x 100%



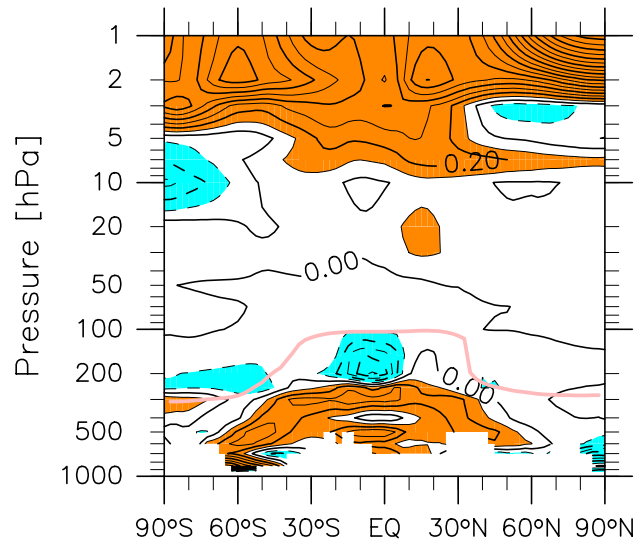
Latitude

Latitude

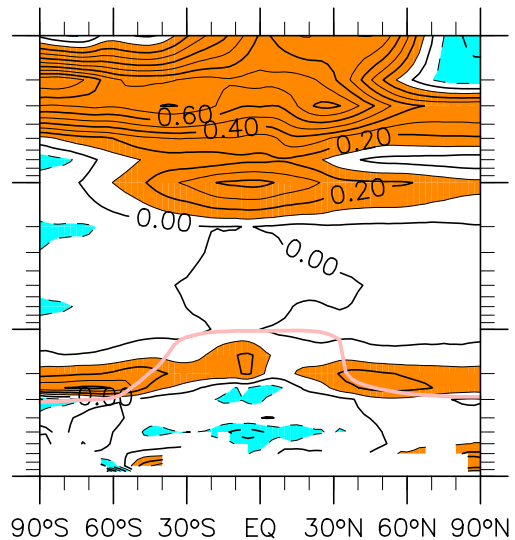
Latitude

Q_longwave [K/d]

(a) MERRA-2 - REM

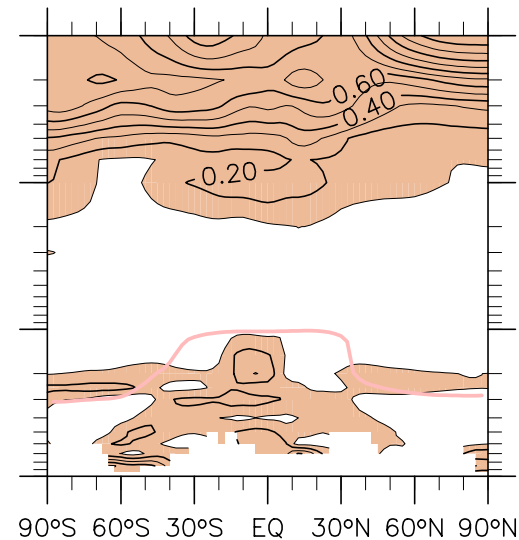


(b) JRA-55 - REM

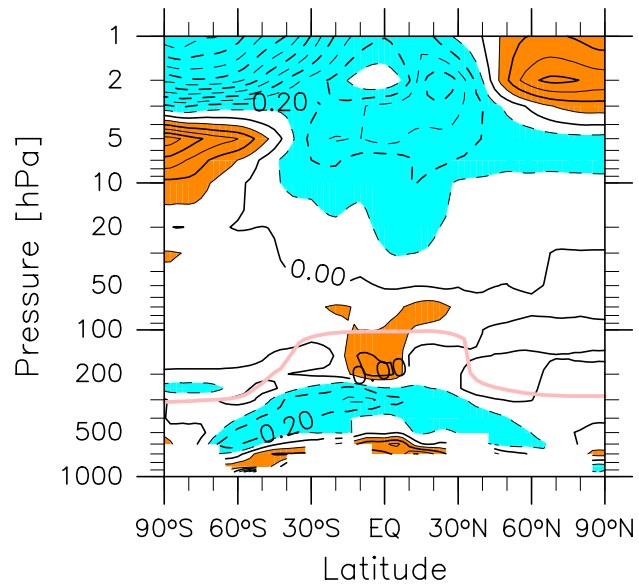


DJF (D80-F10)

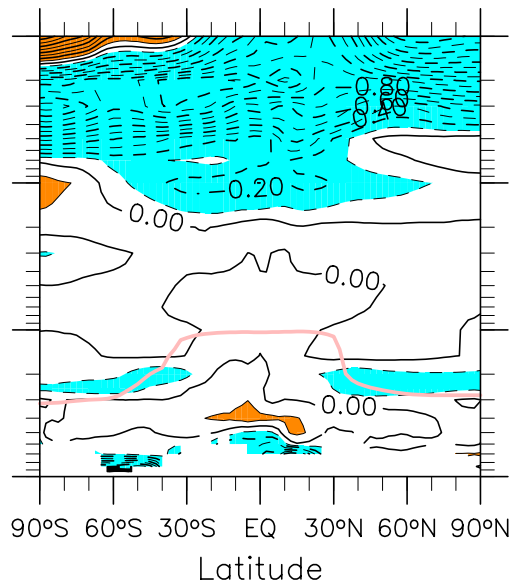
(e) SD



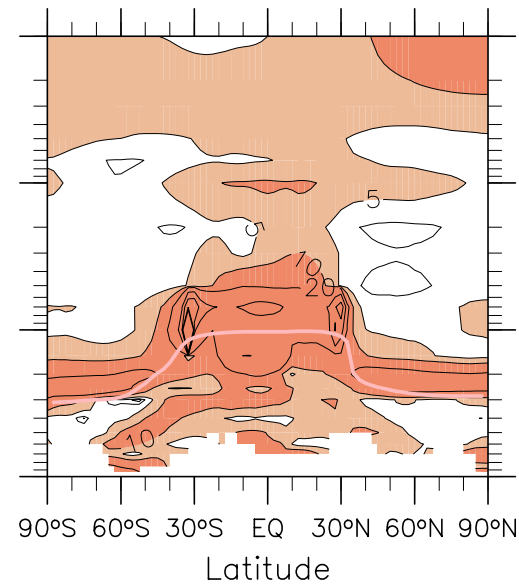
(c) ERA-Int - REM

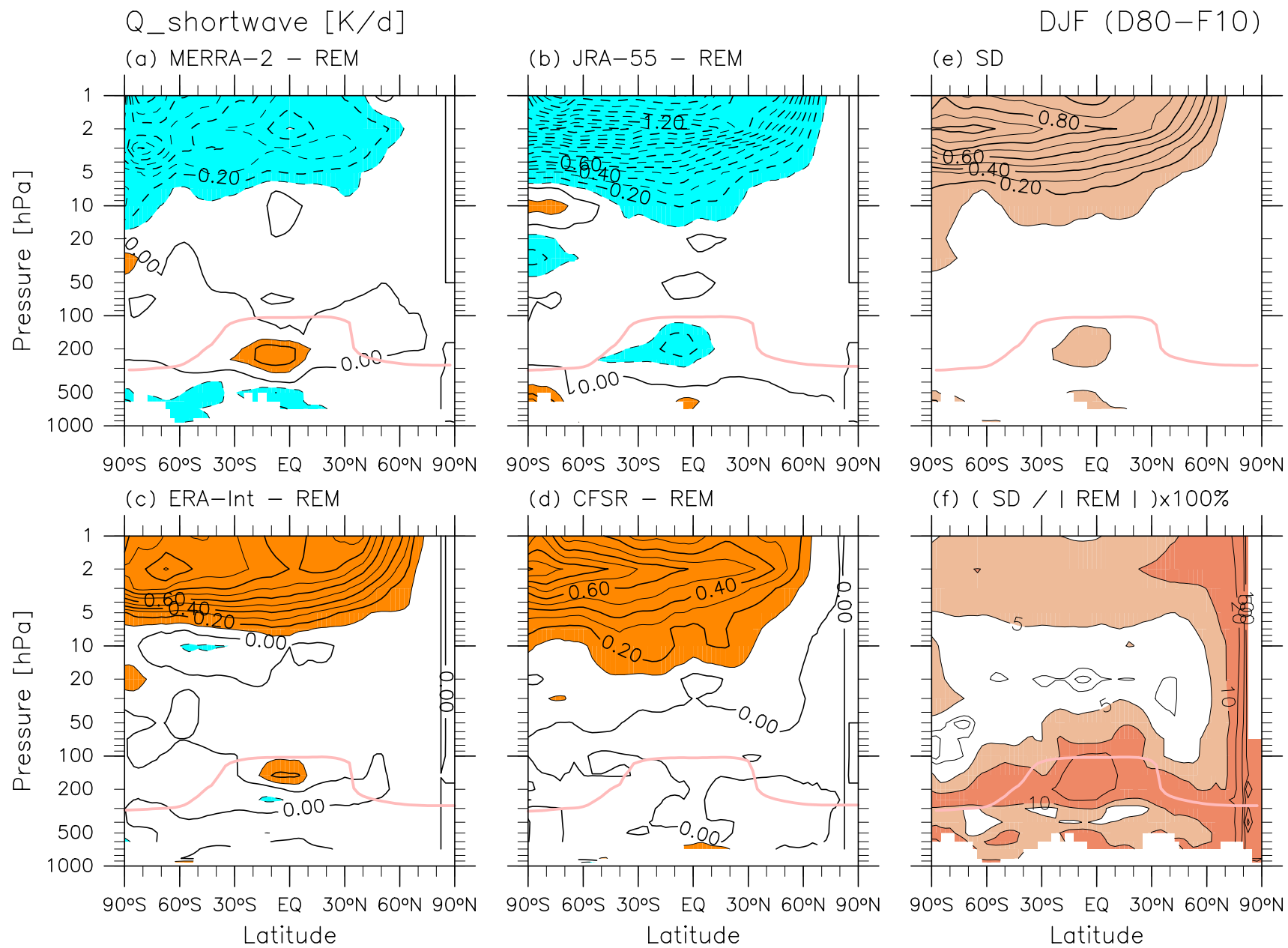


(d) CFSR - REM



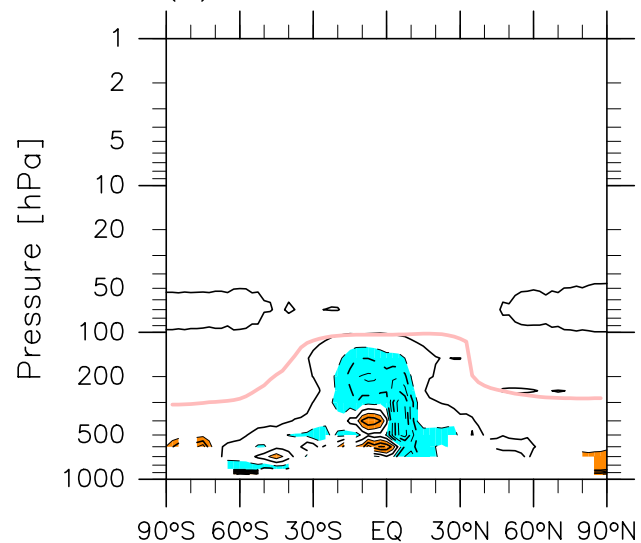
(f) (SD / | REM |) x 100%



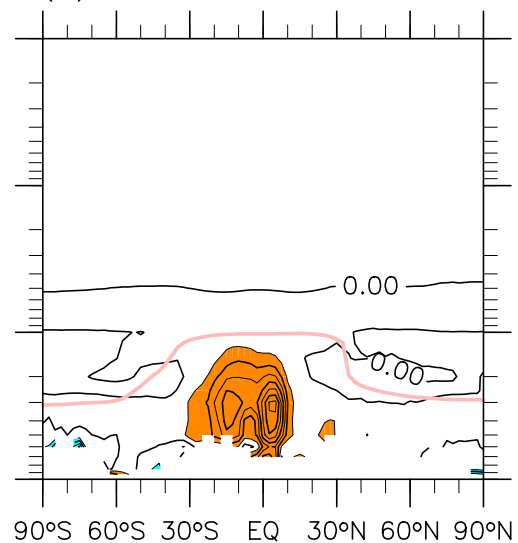


$Q_{\text{total}} - Q_{\text{rad}}$ [K/d]

(a) MERRA-2 - REM

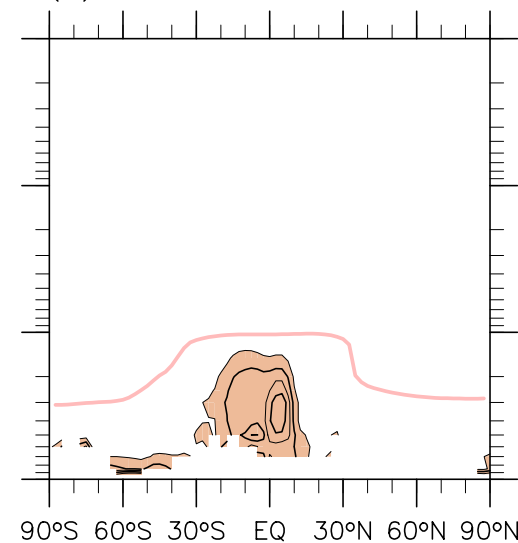


(b) JRA-55 - REM

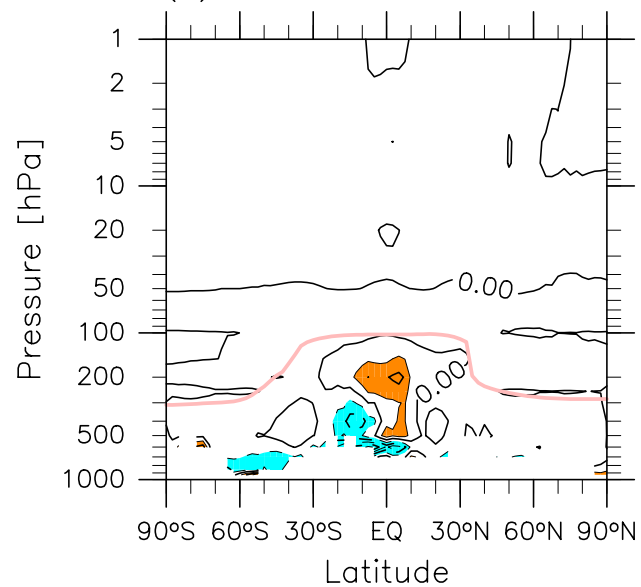


DJF (D80-F10)

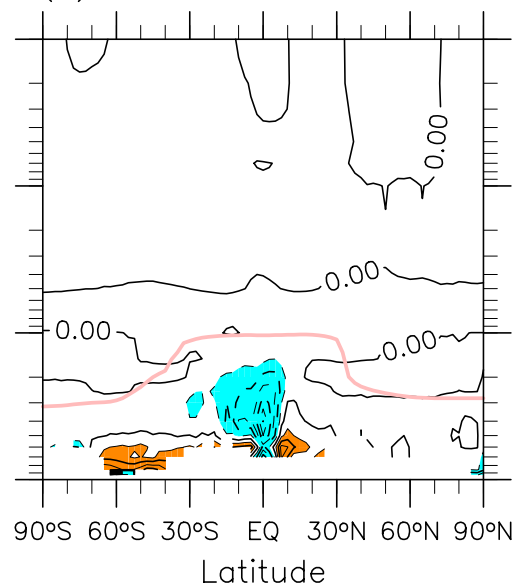
(e) SD



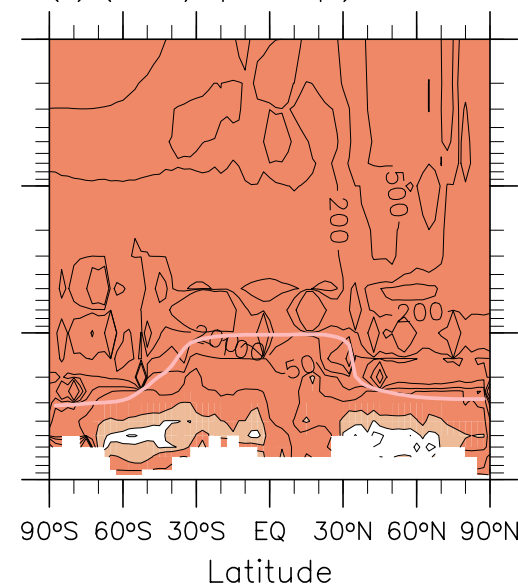
(c) ERA-Int - REM



(d) CFSR - REM

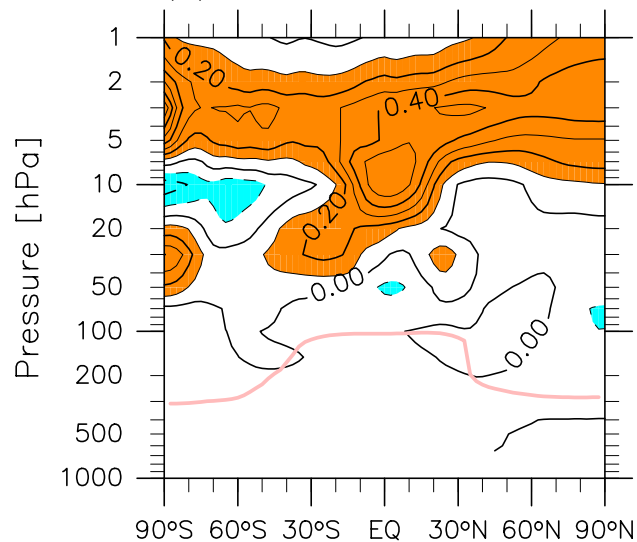


(f) $(SD / |REM|) \times 100\%$

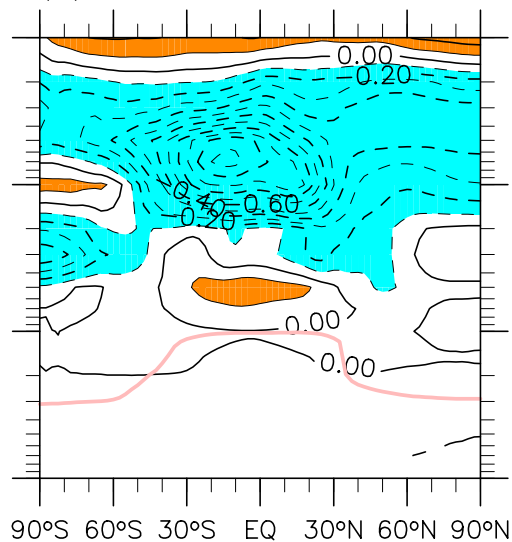


Ozone [ppmv]

(a) MERRA-2 - REM

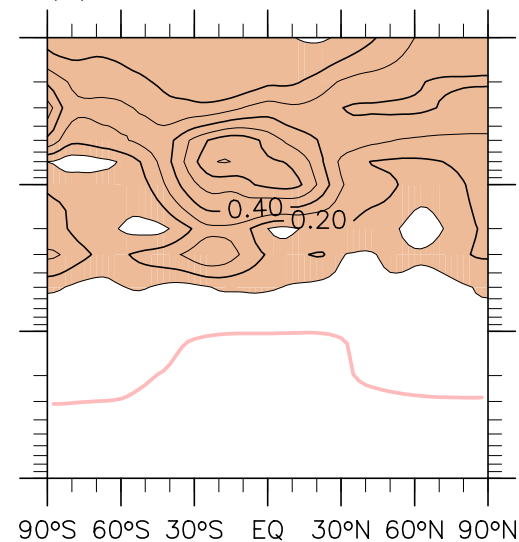


(b) JRA-55 - REM

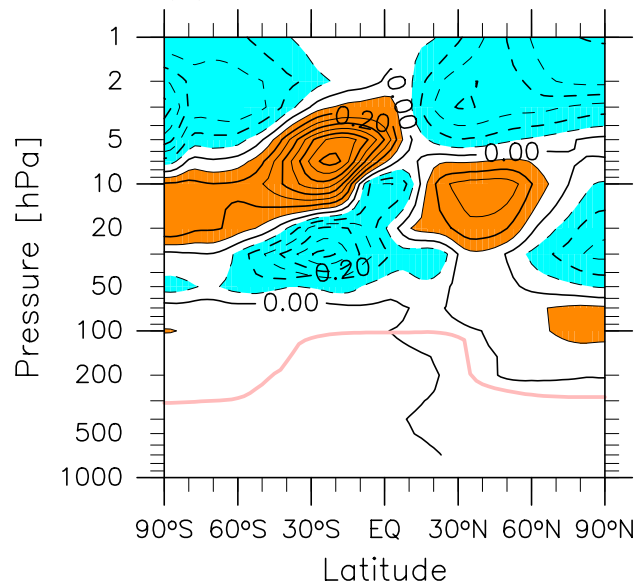


DJF (D80-F10)

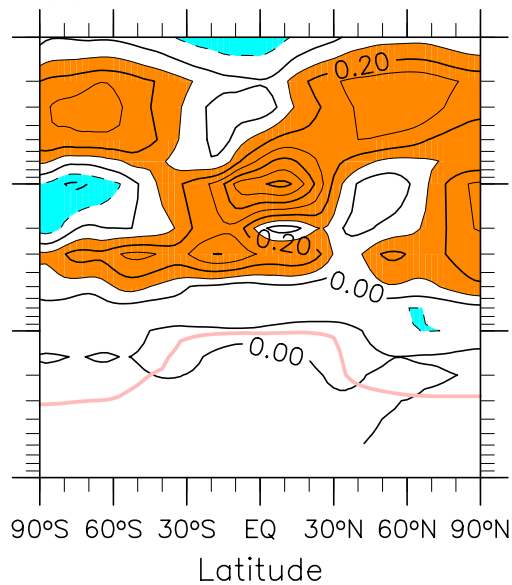
(e) SD



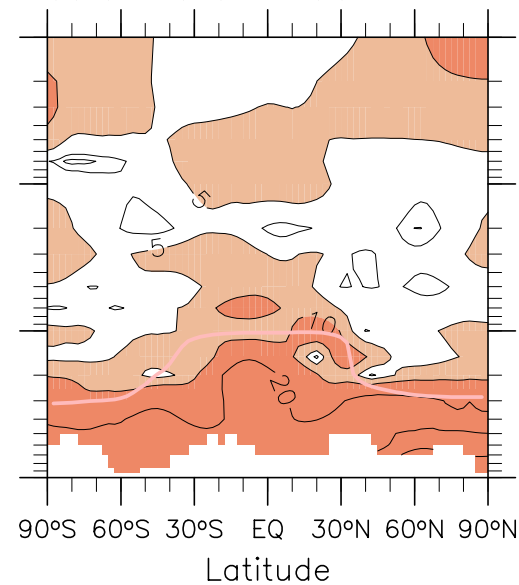
(c) ERA-Int - REM



(d) CFSR - REM



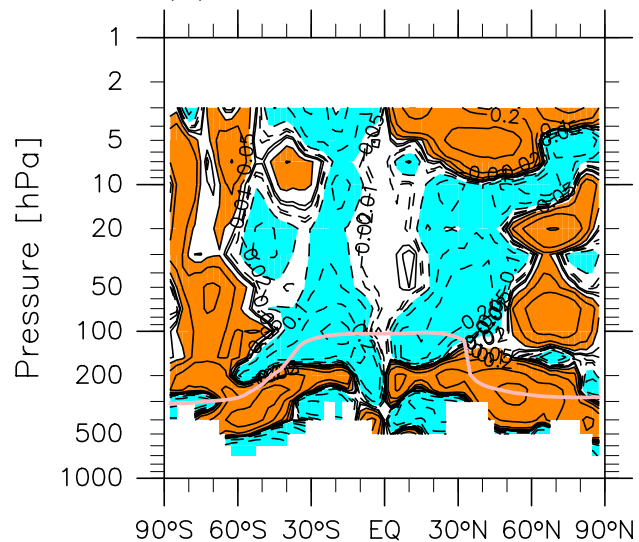
(f) (SD / | REM |) x 100%



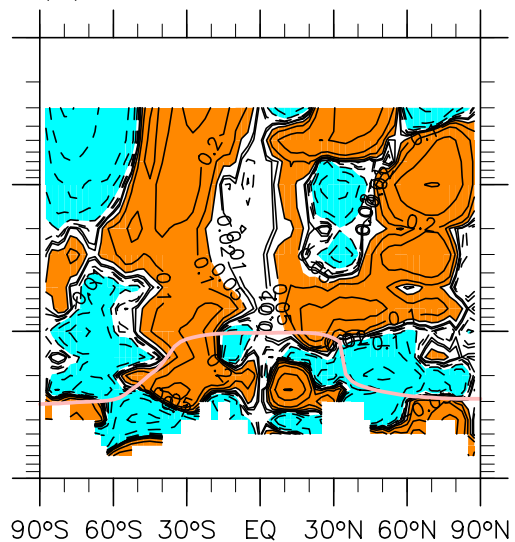
+f_v*

DJF (D80–F10)

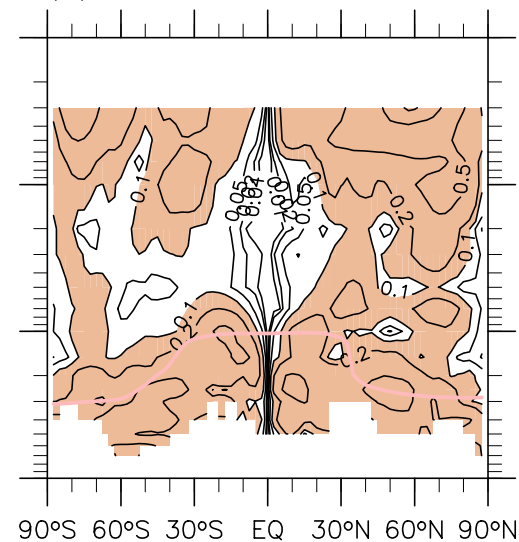
(a) MERRA-2 – REM



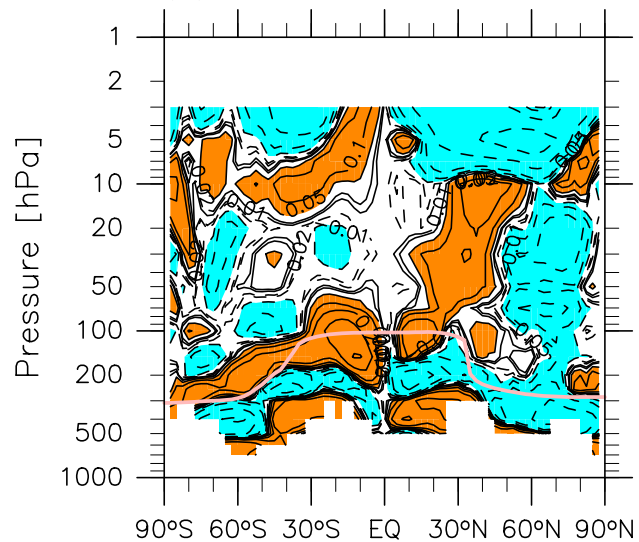
(b) JRA-55 – REM



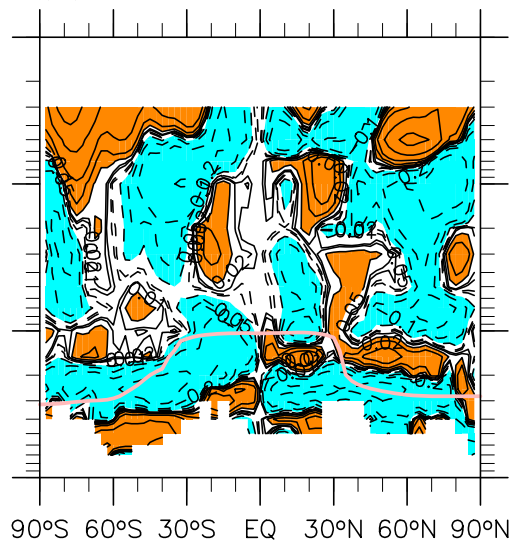
(e) SD



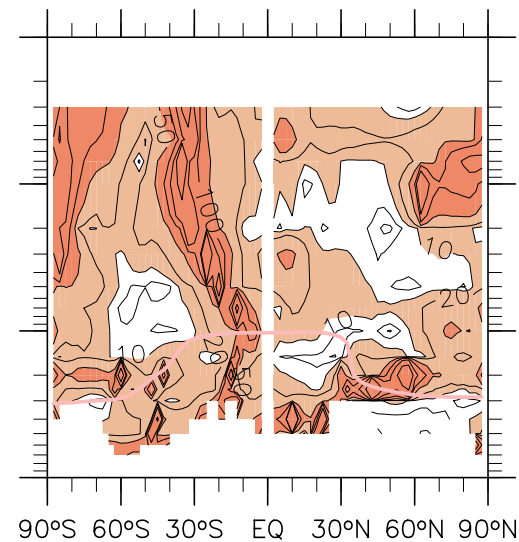
(c) ERA-Int – REM



(d) CFSR – REM



(f) (SD / | REM |)x100%



Latitude

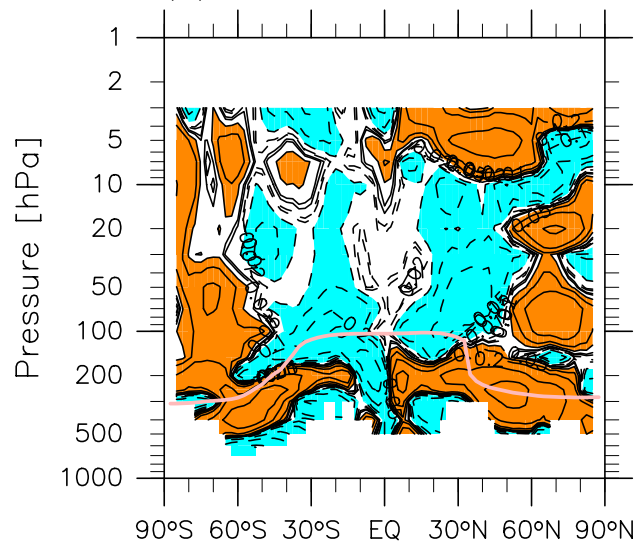
Latitude

Latitude

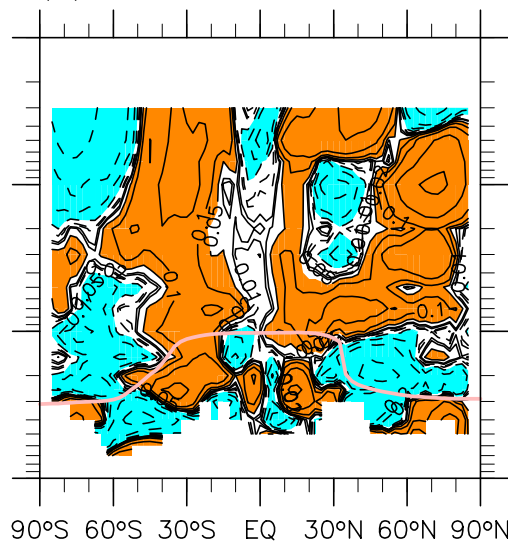
$$+fv^* - v^* \frac{\partial u}{\partial y} - \omega^* \frac{\partial u}{\partial p}$$

DJF (D80–F10)

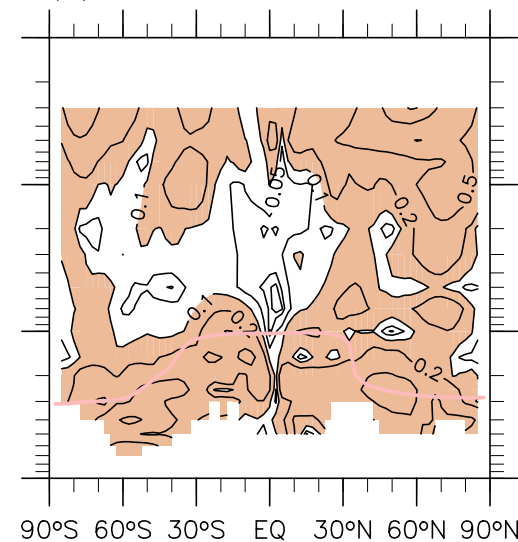
(a) MERRA-2 – REM



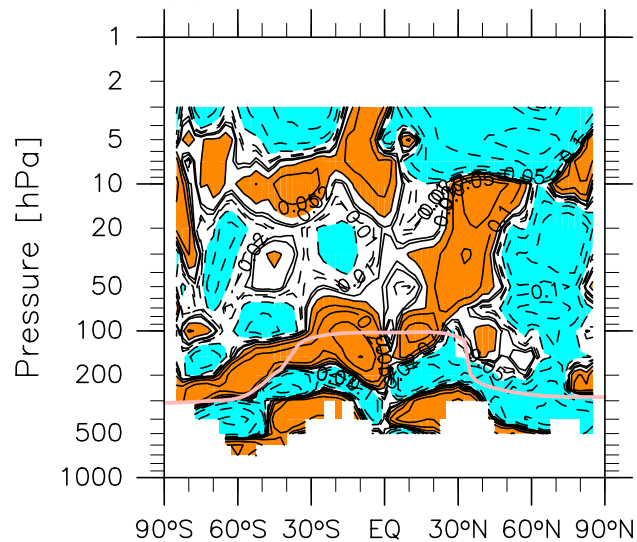
(b) JRA-55 – REM



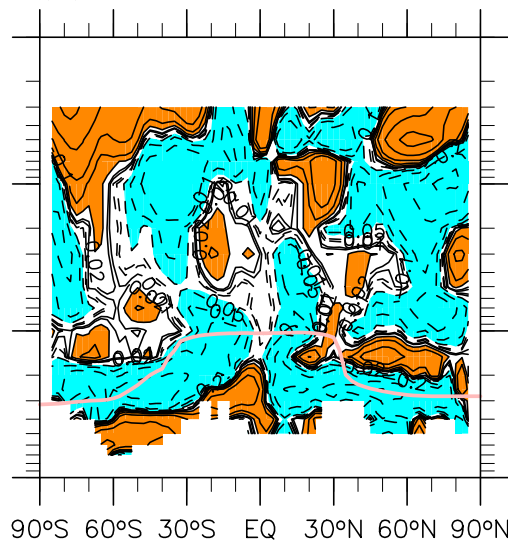
(e) SD



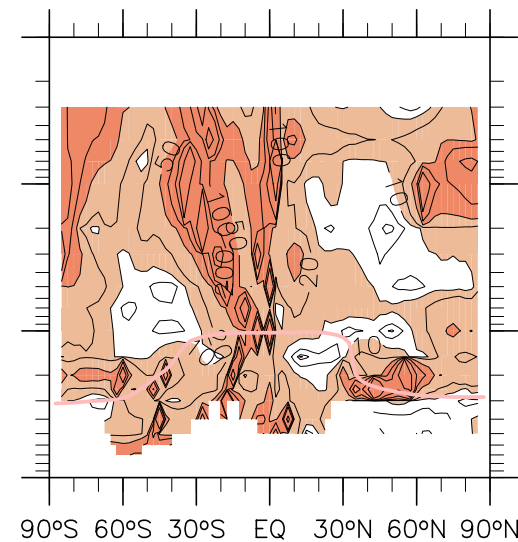
(c) ERA-Int – REM



(d) CFSR – REM



(f) (SD / | REM |) x 100%



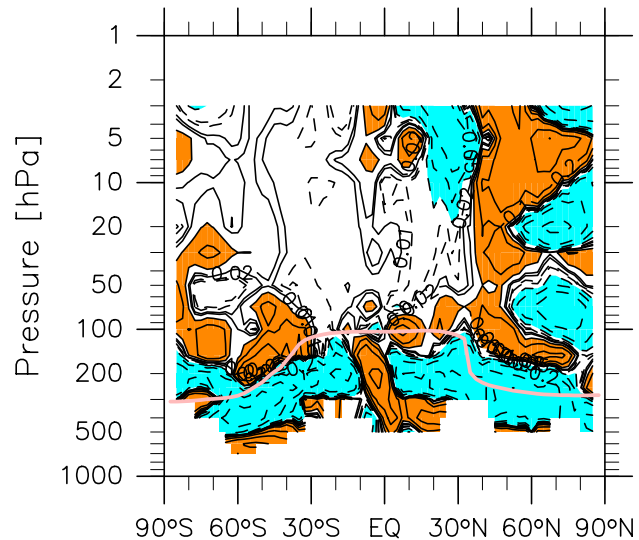
Latitude

Latitude

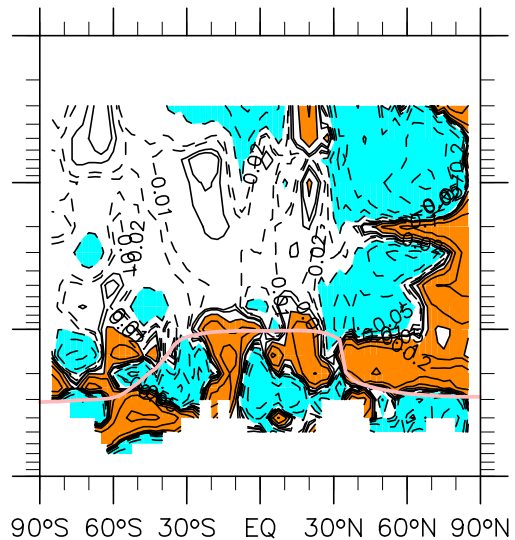
Latitude

EPFD

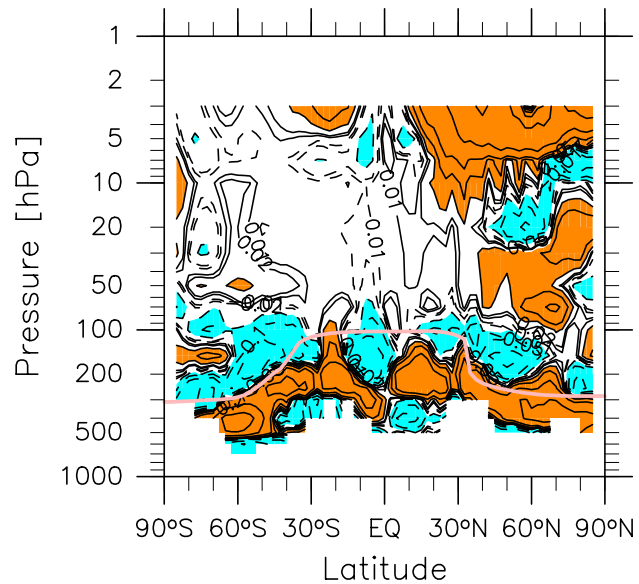
(a) MERRA-2 - REM



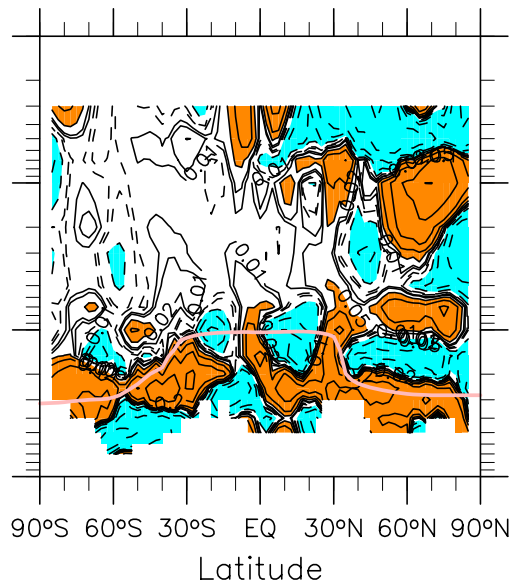
(b) JRA-55 - REM



(c) ERA-Int - REM

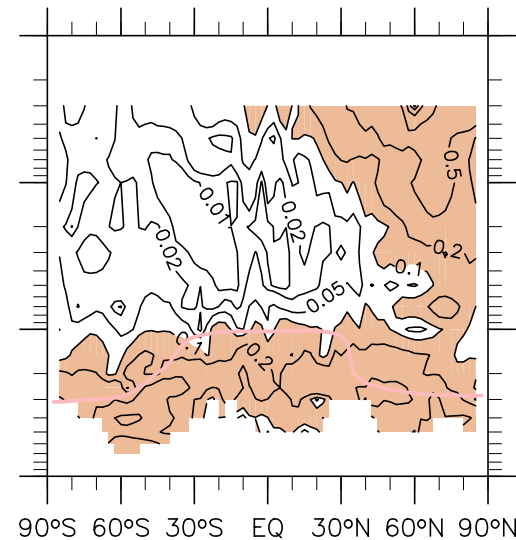


(d) CFSR - REM

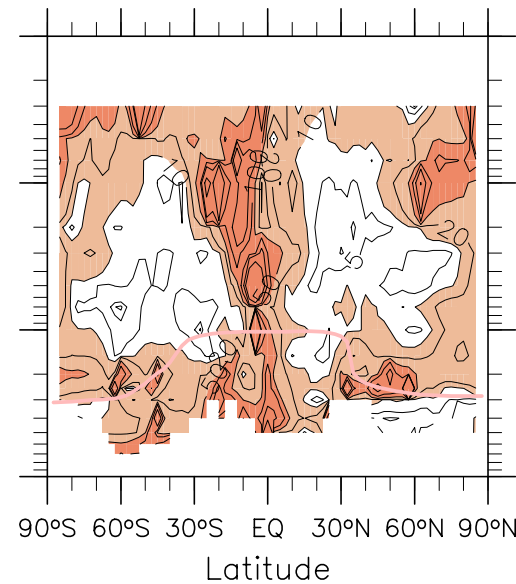


DJF (D80-F10)

(e) SD

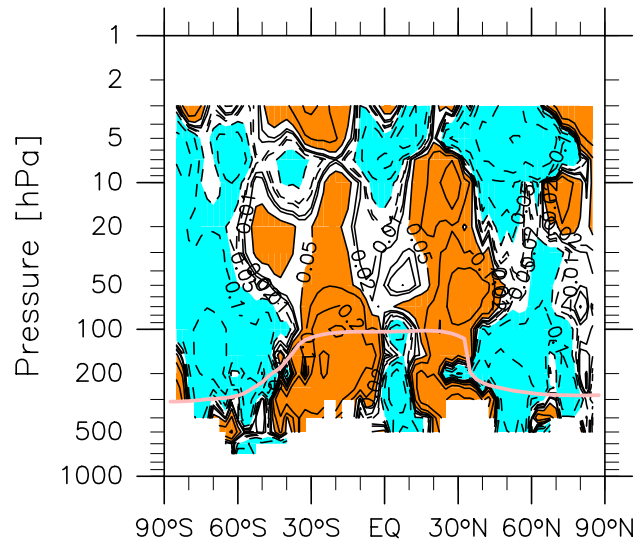


(f) $(SD / |REM|) \times 100\%$

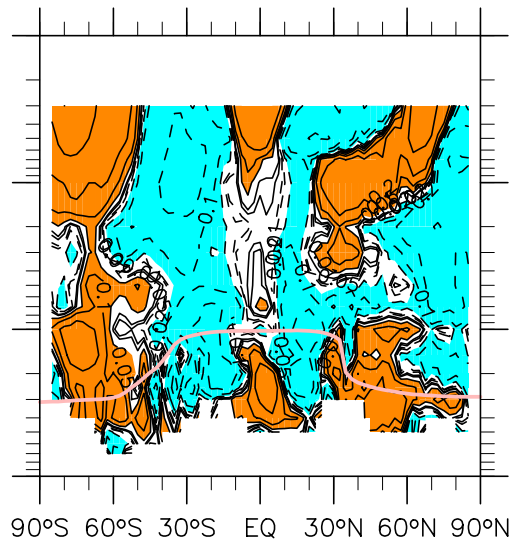


Residual_u

(a) MERRA-2 - REM

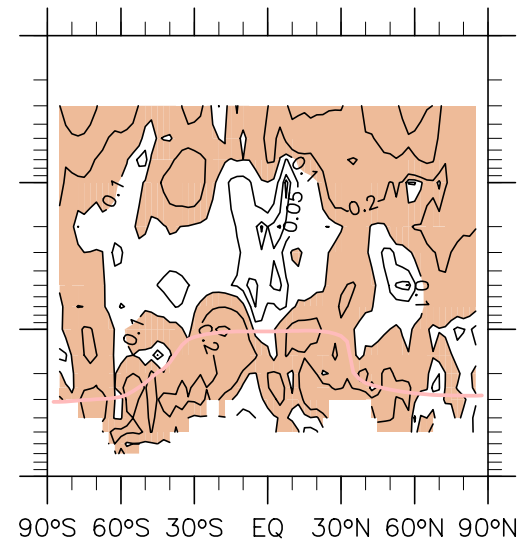


(b) JRA-55 - REM

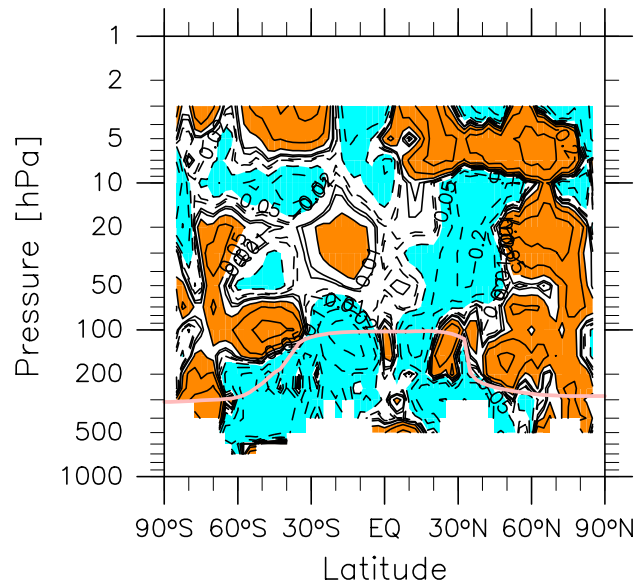


DJF (D80-F10)

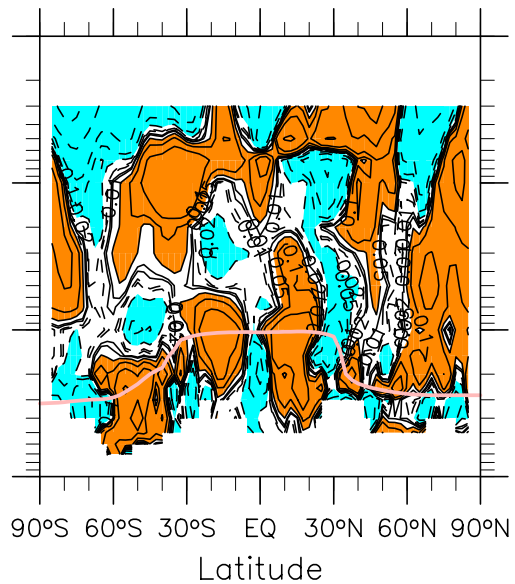
(e) SD



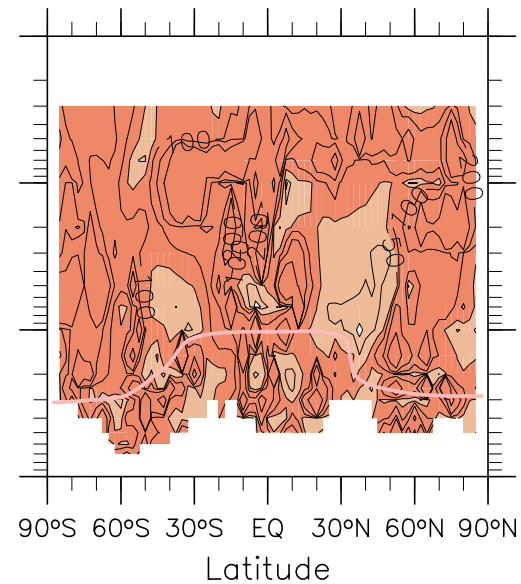
(c) ERA-Int - REM



(d) CFSR - REM

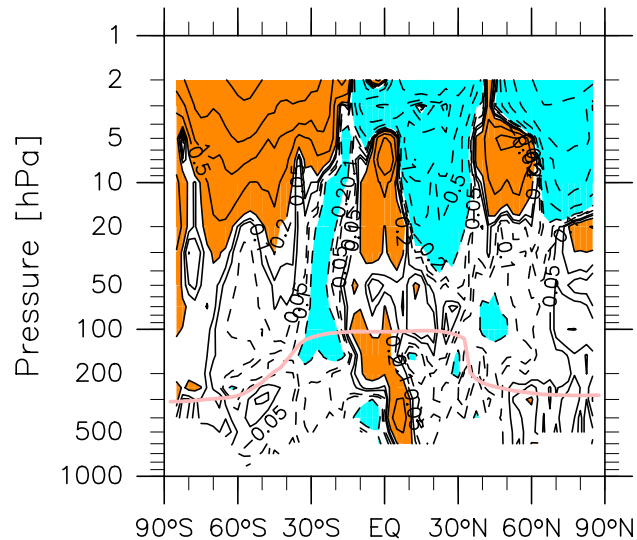


(f) (SD / | REM |) x 100%

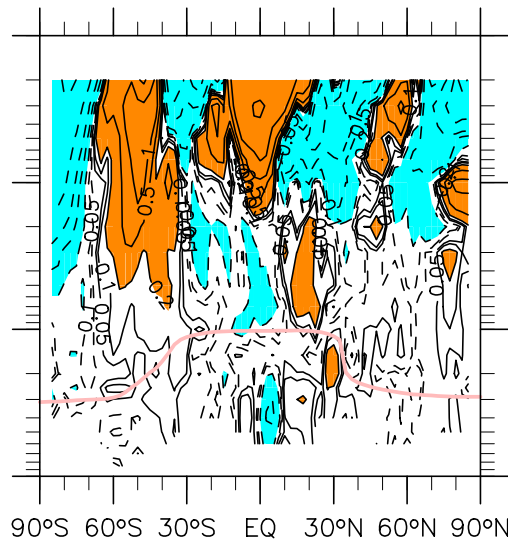


$$-\omega^* \partial\theta/\partial p$$

(a) MERRA-2 - REM

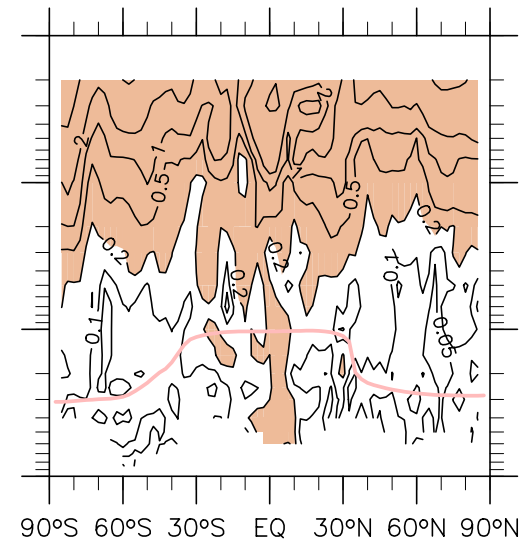


(b) JRA-55 - REM

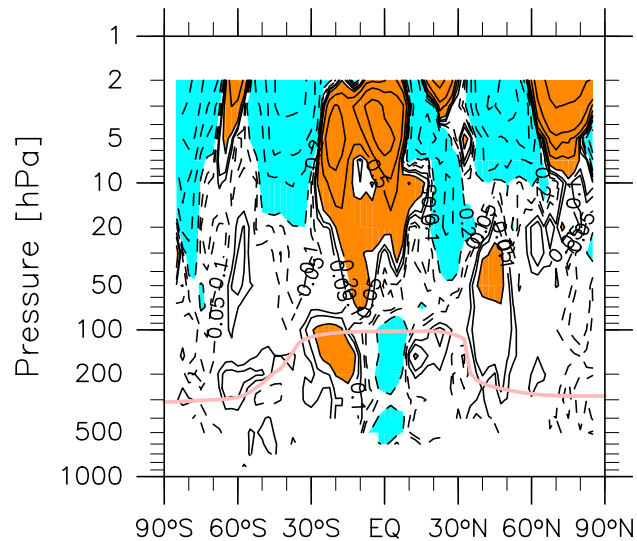


DJF (D80-F10)

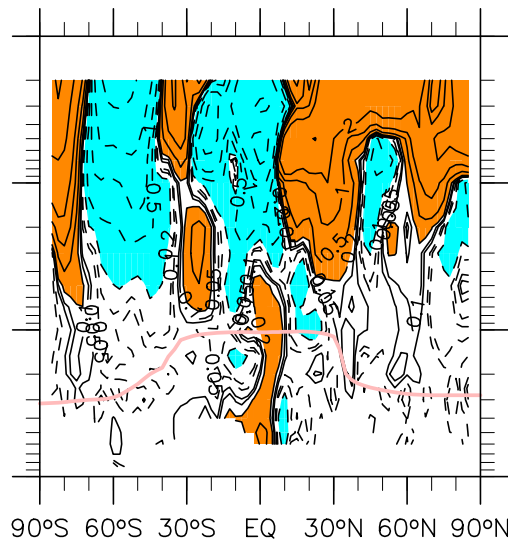
(e) SD



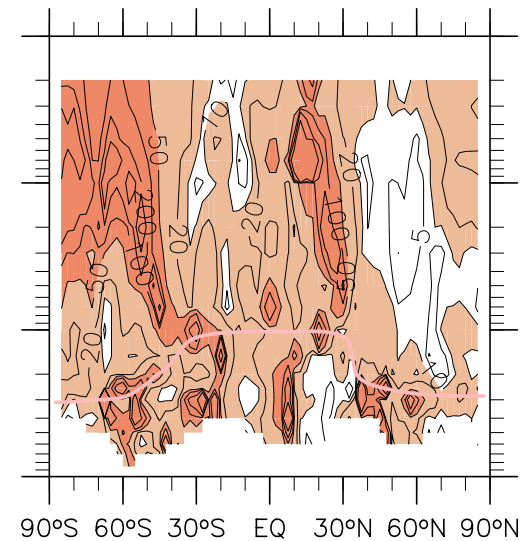
(c) ERA-Int - REM



(d) CFSR - REM



(f) (SD / | REM |) x 100%



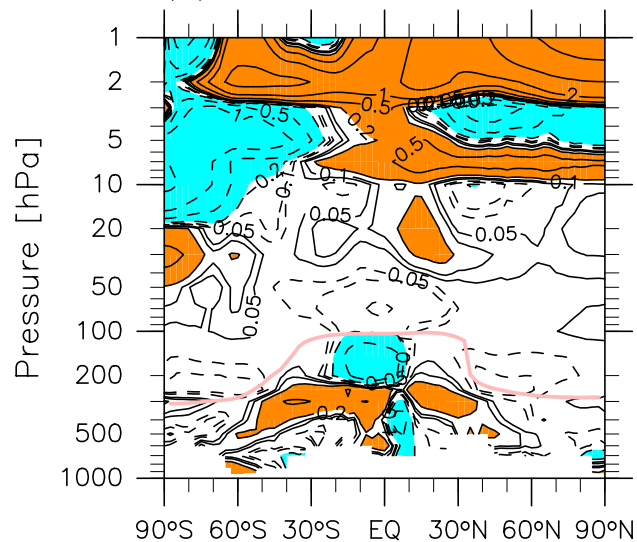
Latitude

Latitude

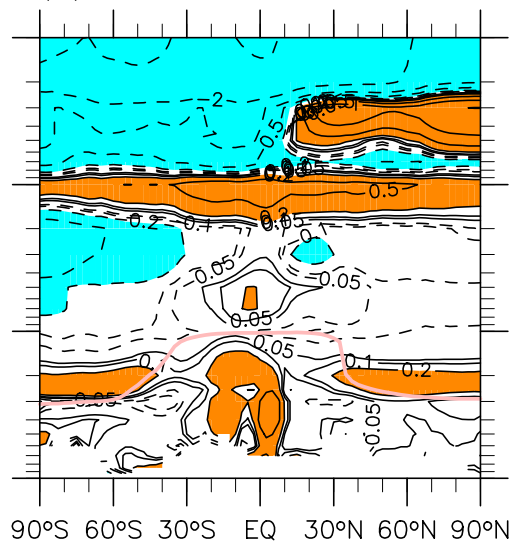
Latitude

Q_{total}

(a) MERRA-2 - REM

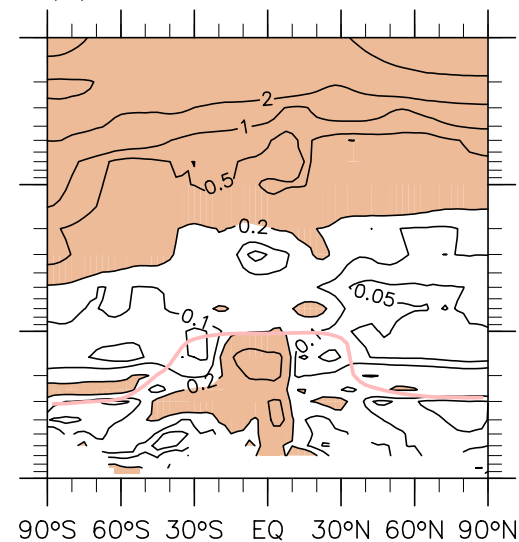


(b) JRA-55 - REM

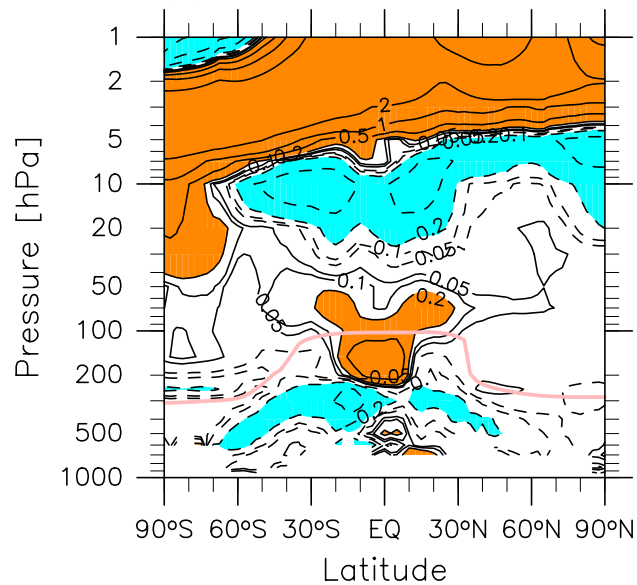


DJF (D80-F10)

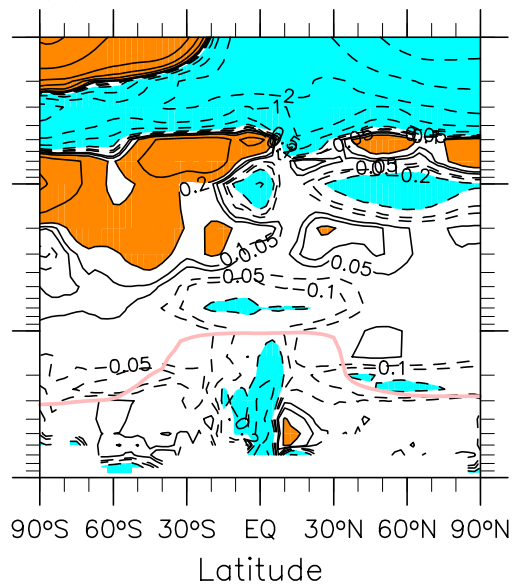
(e) SD



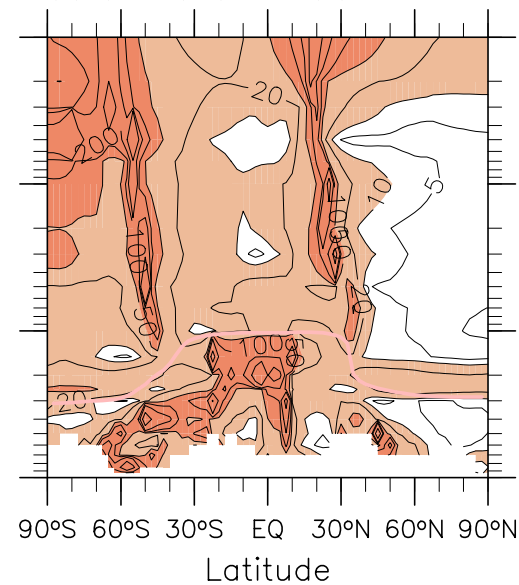
(c) ERA-Int - REM



(d) CFSR - REM

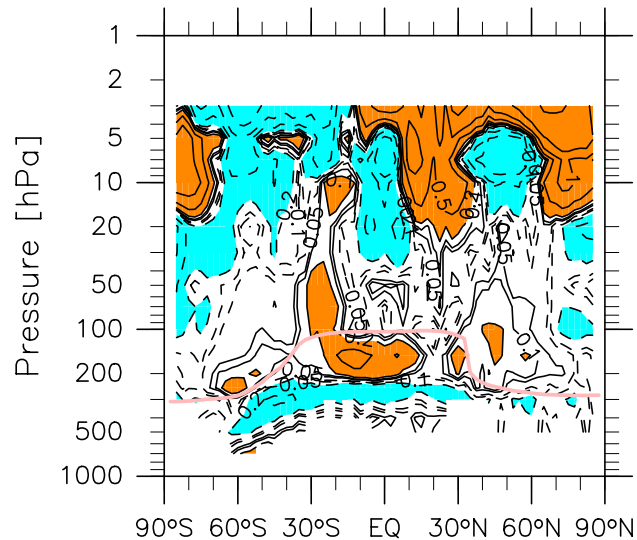


(f) (SD / | REM |) x 100%

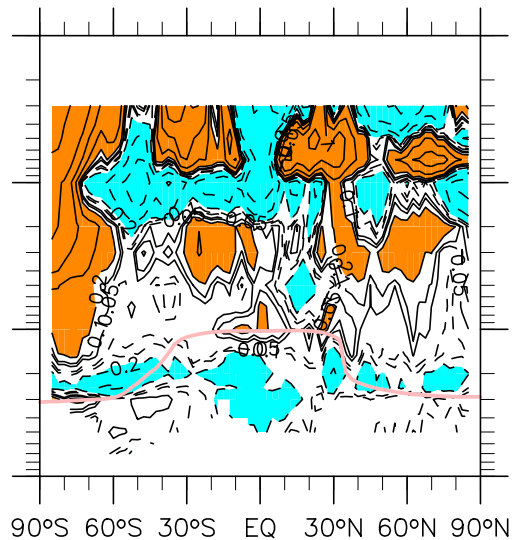


Residual_Θ

(a) MERRA-2 - REM

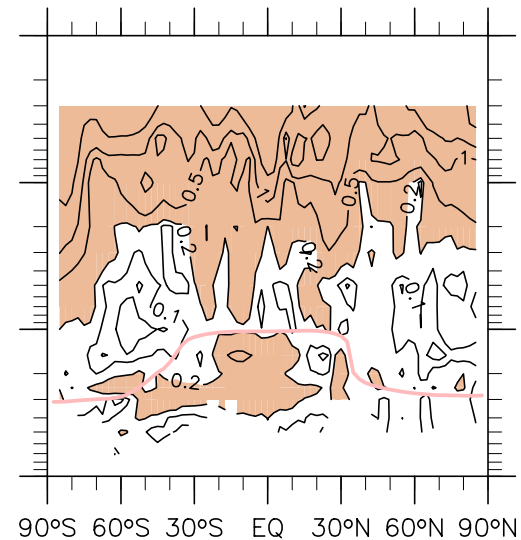


(b) JRA-55 - REM

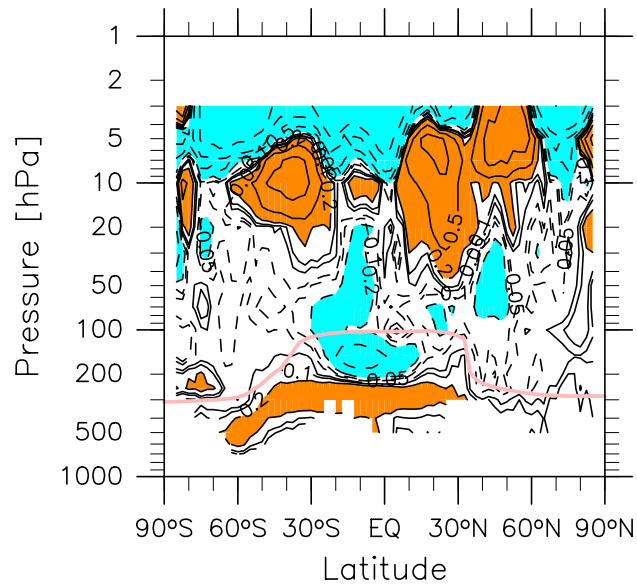


DJF (D80-F10)

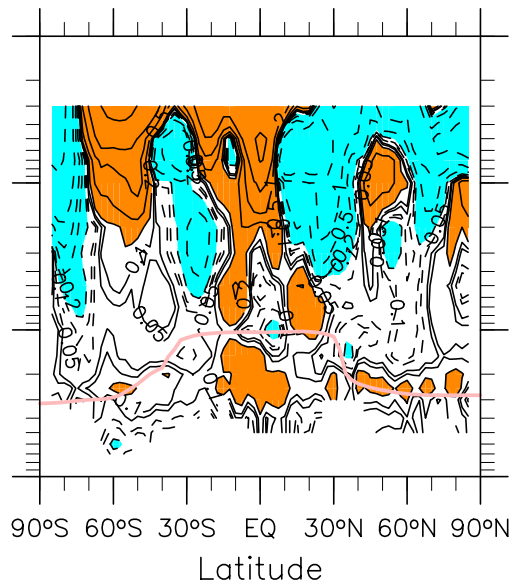
(e) SD



(c) ERA-Int - REM



(d) CFSR - REM



(f) (SD / | REM |) x 100%

